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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/709,735 | 05/25/2004 | Chih-Chiang Wen | MTKP0165USA | 3734 |
| 27765 | 7590 | 09/21/2006 | | |
| NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION | | | | EXAMINER |
| P.O. BOX 506 | | | | MOORE, PATRICK M |
| MERRIFIELD, VA 22116 | | | | ART UNIT |
| | | | | PAPER NUMBER |
| | | | | 2188 |

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/709,735 | WEN ET AL. |
| | Examiner | Art Unit |
| | Patrick M. Moore | 2188 |

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 May 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-35 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 5/25/04 & 8/21/06.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

1. Claims 1-35 have been examined.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on **25 May 2004 & 21 August 2006** have been considered by the examiner.

Double Patenting

3. **Claims 1-4, 21 & 23** of this application conflict with **Claim 1-4 of Application No. 10/710,097**. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. **Claims 1-4, 21 & 23** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **Claims 1-4** of copending **Application No. 10/710,097**. Although the conflicting claims are not identical, they are not patentably distinct from each other because **Claims 1 & 21, 2 & 23, 3 and 4** of the instant application are respectively anticipated by **Claims 1, 2, 3 and 4** of the copending application.

- a. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.
- b. With respect to **Claims 1-4, 21 & 23** of the instant application, please refer to the table below, which illustrates the anticipatory relationship of the claims at issue:

| Instant Application 10/709735 | | Copending Application 10/710097 |
|--|---|---|
| 1. An optical disc drive circuit comprising: a bus interface for communications with a host; | 21. A computer system comprising: a host computer comprising operational firmware for controlling operations of an optical disc drive; and an optical disc drive comprising: an interface unit electrically coupled to the bus interface for downloading operational firmware from the host; | 1. An optical disc drive circuit comprising: a bus interface for communications with a host; |
| | [“firmware downloaded ... over a connecting bus interface”, as below] | an interface unit electrically coupled to the bus interface for downloading a first operational firmware from the host; |
| a control circuit electrically coupled to the interface unit for transferring the | a volatile memory comprising the operational firmware downloaded from | a control circuit electrically coupled to the interface unit for transferring the first |

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| | | |
|---|---|--|
| downloaded operational firmware to a volatile memory; | the host computer over a connecting bus interface; | operational firmware to a volatile memory; |
| and a microprocessor electrically coupled to the control circuit for executing the downloaded operational firmware while stored in the volatile memory; wherein the microprocessor controls the normal operations of the optical disc drive according to the downloaded operational firmware. | and a microprocessor executing the operational firmware in the volatile memory for controlling normal operations of the optical disc drive. | and a microprocessor electrically coupled to the control circuit for executing the first operational firmware while stored in the volatile memory; wherein the microprocessor controls the normal operations of the optical disc drive according to the first operational firmware, and the control circuit is electrically coupled to a non-volatile memory which stores a second operational firmware. |

| Instant Application 10/709735 | Copending Application 10/710097 |
|--|--|
| 2. The computer system of claim 1 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards. | 23. The computer system of claim 21 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards. |

| Instant Application 10/709735 | Copending Application 10/710097 |
|---|---|
| 3. The optical disc drive circuit of claim 1 wherein the interface unit is a macro. | 3. The optical disc drive circuit of claim 1 wherein the interface unit is a macro. |
| 4. The optical disc drive circuit of claim 3 wherein the macro comprises handshaking, data reception, and writing received data into the memory functions. | 4. The optical disc drive circuit of claim 3 wherein the macro comprises handshaking, data reception, and writing received data into the memory functions. |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2 & 5-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Hu (US Patent # 6,170,043).

a. As per **Claim 1**, Hu discloses an optical disc drive circuit comprising: a bus interface for communications with a host [**Figure 2, #214 & Column 1, Lines 63-65**]; an interface unit electrically coupled to the bus interface for downloading operational firmware from the host [**Figure 2, #206, Column 1, Line 63 – Column 2, Line 3 & Column 5, Lines 40-43**]; a control circuit electrically coupled to the interface unit [**Figure 2, #208**] for transferring the downloaded operational firmware to a volatile memory [**Figure 2, #210, #202 & Column 1, Line 63 – Column 2, Line 6**]; and a microprocessor electrically coupled to the control circuit for executing the downloaded operational firmware while stored in the volatile memory [**Figure 2, #204 & Column 1, Line 63 – Column 2, Line 6**]; wherein the microprocessor controls the normal operations of the optical disc drive according to the downloaded operational firmware [**Column 2, Lines 6-17 & Lines 20-29**].

- b. As per **Claim 2**, Hu further discloses the optical disc drive circuit of claim 1 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards **[Column 3, Lines 45-46]**.
- c. As per **Claim 5**, Hu further discloses the optical disc drive circuit of claim 1 wherein the interface unit further downloads initialization data for the optical disc drive **[Column 5, Lines 38-43]**.
- d. As per **Claim 6**, Hu further discloses the optical disc drive circuit of claim 1 wherein the control circuit is electrically coupled to a non-volatile memory which stores initialization data without storing operational firmware **[Figure 2, #210 & Column 4, Lines 8-19]**.
- e. As per **Claim 7**, Hu further discloses the optical disc drive circuit of claim 1 wherein the host is a computer system **[Figure 2, #212]**.
- f. As per **Claim 8**, Hu further discloses the optical disc drive circuit of claim 1 wherein the microprocessor executes the downloaded operational firmware without accessing a non-volatile memory **[Column 6, Lines 17-28]**.
- g. As per **Claim 9**, Hu further discloses the optical disc drive circuit of claim 1 wherein the normal operations of the optical disc drive at least include reading data from an optical disc **[Column 3, Lines 62-66]**.
- h. As per **Claim 10**, Hu further discloses the optical disc drive circuit of claim 1 wherein the volatile memory comprises the downloaded operational firmware

being executed by the microprocessor to control normal operations of the optical disc drive **[Column 4, Lines 8-19]**.

- i. As per **Claim 11**, Hu discloses an optical disc drive comprising a download mode wherein operational firmware is downloaded from an external host and stored into a volatile memory of the optical disc drive **[Column 2, Lines 6-17 Lines 20-29 & Column 5, Lines 38-43]**, followed by a normal mode wherein a microprocessor of the optical disc drive executes the stored operational firmware to control normal operations of the optical disc drive **[Column 4, Lines 8-19]**.
- j. As per **Claim 12**, Hu further discloses the optical disc drive of claim 11 wherein the normal operations of the optical disc drive at least include reading data from an optical disc, processing the data, and transferring the processed data to the host **[Column 3, Line 62 – Column 4, Line 7]**.
- k. As per **Claim 13**, Hu further discloses the optical disc drive of claim 11 wherein data required for the initialization of the optical disc drive is downloaded from the external host to initialize the optical disc drive before the operational firmware is downloaded **[Figure 6, Column 5, Lines 25-43]**.
- l. **Claims 14, 18, 23 & 28** are rejected under identical grounds as Claim 2, above.
- m. **Claims 15, 20 & 30** are rejected under identical grounds as Claim 7, above.
- n. As per **Claim 11**, Hu discloses a method of operating an optical disc drive, the optical disc drive comprising a control circuit connected to a microprocessor, a

volatile memory, and a bus interface connected to a host [Figure 2 & Column 1, Lines 63-67], the method comprising: downloading operational firmware from the host; writing the operational firmware into the volatile memory; and the microprocessor executing the operational firmware in the volatile memory to control normal operations of the optical disc drive [Figure 2, #204 & Column 1, Line 63 – Column 2, Line 6].

- o. **Claims 17 & 24** are rejected under identical grounds as Claim 13, above.
- p. As per **Claim 19**, Hu further discloses the method of claim 16 further comprising the optical disc drive transmitting an electrical signal to an application program in the host to begin downloading the operational firmware [Column 5, Lines 25-27].
- q. As per **Claim 21**, Hu discloses a computer system comprising: a host computer comprising operational firmware for controlling operations of an optical disc drive [Figure 2, #214 & Column 1, Lines 63-65]; and an optical disc drive comprising: a volatile memory comprising the operational firmware downloaded from the host computer over a connecting bus interface [Figure 2, #202 & Column 1, Line 63 – Column 2, Line 6]; and a microprocessor executing the operational firmware in the volatile memory for controlling normal operations of the optical disc drive [Figure 2, #204 & Column 1, Line 63 – Column 2, Line 17& Lines 20-29].
- r. As per **Claim 22**, Hu further discloses the computer system of claim 21 wherein the normal operations of the optical disc drive at least include controlling the

rotational speed of an optical disc in the optical disc drive and reading data from the optical disc [Column 3, Lines 63-66].

- s. **Claim 25** is rejected under identical grounds as Claim 1, above.
- t. **Claim 26** is rejected under identical grounds as Claim 10, above.
- u. **Claim 27** is rejected under identical grounds as Claim 11, above.
- v. **Claim 29** is rejected under identical grounds as Claim 6, above.
- w. **Claim 31** is rejected under identical grounds as Claim 7, above.
- x. As per **Claim 32**, Hu further discloses the optical disc drive circuit of claim 27 wherein the host system comprises the volatile memory [**Figure 2, #212 & Column 4, Lines 8-19**].
- y. As per **Claim 33**, Hu further discloses the optical disc drive circuit of claim 27 wherein the host system comprises a host controller accessing the volatile memory that is shared by the host system and the microprocessor during the normal operation [**Column 4, Lines 8-19**].
- z. As per **Claim 34**, Hu further discloses the optical disc drive circuit of claim 27 wherein the volatile memory is accessed only by the optical disc drive circuit on the normal operation [**Column 3, Lines 48-57**].

aa. As per **Claim 35**, Hu further discloses the optical disc drive circuit of claim 27 wherein the optical disc drive circuit comprises the volatile memory [**Figure 2, #212, #202 & Column 4, Lines 8-19**].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 & 4 are rejected under 35 U.S.C. 103(a) as being obvious over **Hu** (US Patent # 6,170,043), as applied to Claim 1 above, and further in view of **Kamihara et al** (US PGPub # 2002/0169904), herein **Kamihara**.

a. The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application

is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

- b. **Hu** does not expressly disclose using macros. However, as per **Claim 3**, **Kamihara** teaches the use of the optical disc drive circuit of claim 1 wherein the interface unit is a macro [**Figure 6, #20 & ¶0095**].
- c. As per **Claim 4**, **Kamihara** further discloses the optical disc drive circuit of claim 3 wherein the macro comprises handshaking, data reception, and writing received data into the memory functions [**¶0095-0097 & ¶0102**].
- d. **Hu** and **Kamihara** are analogous art because they are from the same field of endeavor: computer system memory management. At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine a macro interface unit, as disclosed by **Kamihara**, within the optic disk controller, as disclosed by **Hu**. The suggestion/motivation for doing so would have been for the benefit of aiding the implementation of data transfers, as taught by **Kamihara** in **¶0096**.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick M. Moore whose telephone number is (571) 272-1239. The examiner can normally be reached on M-F 8:30AM - 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabahn can be reached on (571) 272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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